WHAT IS CLAIMED IS:

1. A method of operating a micromechanical scanning apparatus, said method comprising the steps of:

identifying a radius of curvature value for a micromechanical mirror; and

modifying a laser beam that impinges upon said micromechanical mirror so as to compensate for said radius of curvature value so as to improve the optical resolution of said micromechanical scanning apparatus.

2. The method of claim 1 wherein said identifying step includes the steps of:

acquiring a measured far-field optical beam radius for a laser beam reflected from said micromechanical mirror;

dividing said measured far-field optical beam radius by a theoretical far-field optical beam radius reflected from an ideal mirror to yield a ratio value M;

curve fitting an analytical expression for M to experimental data for M with focal-length as a fitting parameter; and

multiplying said focal-length of said curve fitting step by two to establish said radius of curvature.

3. The method of claim 2 wherein said dividing step includes the step of dividing said measured far-field optical beam radius by a theoretical far-field optical beam radius from a perfectly flat, infinitely large theoretical mirror to yield said ratio value M.

4. The method of claim 1 wherein said modifying step includes the step of optically modifying said laser beam to compensate for said radius of curvature.

5. The method of claim 4 wherein said modifying step includes the step of re-shaping the phase front of said laser beam to compensate for said radius of curvature.

6. The method of claim 1 wherein said modifying step includes the step of optically modifying said laser beam within said micromechanical scanning apparatus.

7. The method of claim 1 wherein said modifying step includes the step of optically modifying said laser beam outside of said micromechanical scanning apparatus.

8. The method of claim 7 wherein said modifying step includes the step of optically modifying said laser beam with macroscopic lenses.

9. The method of claim 7 wherein said modifying step includes the step of optically modifying said laser beam through positioning of a display screen.

10. The method of claim 7 wherein said modifying step includes the step of modifying said laser beam with a second micromechanical mirror with a radius of curvature value that is opposite said radius of curvature value for said micromechanical mirror.

11. The method of claim 1 further comprising the step of synchronizing a first micromechanical mirror with a second micromechanical mirror with a modulated light source to produce a displayed image.

12. The method of claim 11 further comprising the step of operating said modulated light source to produce grey-scale images within said displayed image.

13. The method of claim 11 further comprising the step of projecting said displayed image onto the retina of an eye.

14. The method of claim 11 wherein said second micromechanical mirror moves at a sub-harmonic frequency of said first micromechanical mirror.

15. An optical scanning device, comprising:

a first micromechanical mirror;

a first micromechanical drive mechanism;

a first micromechanical spring attached to said first micromechanical drive mechanism to control the motion applied to said first micromechanical mirror from said first micromechanical drive mechanism;

a second micromechanical mirror;

a second micromechanical drive mechanism; and

a second micromechanical spring attached to said second micromechanical drive mechanism to control the motion applied to said second micromechanical mirror from said second micromechanical drive mechanism.

16. The apparatus of claim 15 wherein said second micromechanical drive mechanism is implemented as a set of comb drives that control the position of two points of said second micromechanical mirror.

17. The apparatus of claim 15 wherein said first micromechanical drive mechanism is implemented as a single comb drive that controls the position of a point of said first micromechanical mirror.